Guillian–Barre Syndrome in COVID-19 Pregnancy—First Case Report

Sir,

Neurological manifestations of COVID-19 include anosmia, taste disturbances, cerebrovascular strokes and seizures.[1] Guillain–Barre syndrome (GBS) is an autoimmune disorder and occurrence in COVID-19 pregnancy is rare. We reported first case of acute inflammatory demyelinating polyneuropathy (AIDP) variant of GBS in pregnant lady with COVID pneumonia.

A 32-year eight-month pregnant lady had headache, tingling in limbs, and mild generalised weakness. When she was tested COVID-19 positive by RT-PCR, she was admitted to our COVID Hospital. Her complete blood count, liver/kidney function test and serum electrolytes were normal. Next day, she underwent emergency ceasarean section because of labour pains. After 6 hours, she had dyspnea, dysarthria and quadriparesis. She was given cardiopulmonary resuscitation because of bradycardia and respiratory arrest and put on invasive mechanical ventilation. On neurological examination, she had quadriplegia, truncal and neck weakness, hypotonia, external ophthalmoplegia, bifacial weakness, areflexia and absent plantars. With clinical suspicion of GBS, intravenous Immunoglobulins (400 mg/kg/day) for 5 days were started. Chest X-ray showed left sided consolidation with mild pleural effusion. For COVID pneumonia, she received antibiotics, remdesvir. She underwent tracheostomy after 10 days. She was weaned off from ventilator after 4 weeks. Her weakness started improving gradually. Her electrophysiological studies showed absent sensory nerve action potentials (SNAPs) in bilateral median, ulnar with preserved SNAPs in both sural nerves [Supplementary Table 1]. In lower limbs, bilateral peroneal compound muscle action potentials (CMAPs) were not recordable. Bilateral tibial CMAPs show increased latency, conduction blocks, reduced amplitude and conduction velocities. F waves were not recordable in lower limbs. In upper limbs, bilateral median, ulnar CMAPs showed increased latency, conduction block, temporal dispersion, reduced amplitude and conduction velocities. These findings confirmed symmetric demyelinating sensorimotor polyneuropathy favouring AIDP variant of GBS. In next 2 weeks, patient was able to walk. Her newborn was COVID-19 positive but was asymptomatic and recovered after 10 days.

COVID-19 commonly manifests with fever and respiratory symptoms but acute cerebrovascular diseases, seizures, ageusia, anosmia, meningitis, encephalitis and skeletal muscle involvement are important neurological manifestations.[1] Recently, case reports of Guillain–Barre in SARS-CoV-2 infection are increasing.[2] The commonly reported clinical features in COVID GBS include limb weakness (tetra paresis, or paraparesis), hypo or areflexia, sensory disturbances, facial palsy, respiratory failure.[2] An association between GBS and coronavirus infections had been reported.[3] Sensorimotor signs, facial palsy, respiratory insufficiency and demyelinating electrophysiological subtype has mentioned GBS with preceding virus infections like Cytomegalovirus and Zika virus.[2] This could be probability in our case. Campylobacter jejuni may be associated with primary axonal subtypes of GBS.[2] The most common electrophysiological pattern observed in

COVID GBS was demyelinating.[4] COVID-19 associated GBS should be treated with IVIG unless there is clear contraindication like coagulopathy.[4] GBS is reported in pregnancy.[5] GBS in COVID pregnancy is not yet reported. Intravenous Immunoglobulins 2 gm/kg over 5 days may be safe for GBS with COVID pregnancy. Supportive respiratory care, early tracheostomy, physiotherapy are very important aspects during management.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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References

1. Mao L, Jin H, Wang M, Hu Y, Chen S, He Q, *et al*. Neurologic manifestations of hospitalized patients with coronavirus disease 2019 in Wuhan, China. JAMA Neurol 2020;77:1-9.
2. Uncini A, Vallat JM, Jacobs BC. Guillain-Barré syndrome in SARS-CoV-2 infection: An instant systematic review of the first six months of pandemic. J Neurol Neurosurg Psychiatry 2020;91:1105-10.
3. Kim JE, Heo JH, Kim HO, Song SH, Park SS, Park TH, *et al*. Neurological complications during treatment of Middle East respiratory syndrome. J Clin Neurol 2017;13:227-33.
4. Caress JB, Castoro RJ, Simmons Z, Scelsa SN, Lewis RA, Ahlawat A, *et al*. COVID-19–associated Guillain-Barré syndrome: The early pandemic experience. Muscle Nerve 2020;62:485-91.
5. Fernando T, Ambanwala A, Ranaweera P, Kaluarachchi A. Guillain-Barré syndrome in pregnancy: A conservatively managed case. J Family Med Prim Care 2016;5:688-90.

Submitted: 03-Feb-2021 **Accepted:** 07-Feb-2021 **Published:** 17-Apr-2021

DOI: 10.4103/aian.AIAN_1272_20

Supplementary Table 1: Sensory and motor nerve conduction studies

SENSORY NERVE STUDIES				
		UPPER LIMB		
Nerve: Right Median				
Site	Latency (ms)	Amplitude	Area	Conduction velocity (m/s)
Wrist				
Nerve: Left Median				
Site	Latency (ms)	Amplitude	Area	Conduction velocity (m/s)
Wrist				
Nerve: Right Ulnar				
Site	Latency (ms)	Amplitude	Area	Conduction velocity (m/s)
Wrist				
Nerve: Left Ulnar				
Site	Latency (ms)	Amplitude	Area	Conduction velocity (m/s)
Wrist				
		LOWER LIMB		
Nerve: Right Sural				
Site	Latency (ms)	Amplitude	Area	Conduction velocity (m/s)
Mid calf	2.9	10.3 µV	12.8 µVmS	63.32
Nerve: Left Sural				
Site	Latency (ms)	Amplitude	Area	Conduction velocity (m/s)
Mid calf	1.96	4.8 µV	4.7 µVmS	73.98
MOTOR NERVE STUDIES				
		UPPER LIMB		
Nerve: Right Median				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Wrist	5.94	3.3 mV	18.1 mVmS	12.72
Elbow	23.23	267.6 µV	1529.5 µVm	
Nerve: Left Median				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Wrist	7.81	3.1 mV	18.7 mVmS	40.59
Elbow	13.23	218.3 µV	2119.8 µVm	
Nerve: Right Ulnar				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Wrist	3.13	2.3 mV	12.0 mVmS	23.74
Elbow	13.23	0.9 mV	4.1 µVm	
Nerve: Left Ulnar				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Wrist	2.71	1.9 mV	9.2 mVmS	21.74
Elbow	13.75	0.5 mV	2.6 µVm	
		LOWER LIMB		
Nerve: Right Peroneal				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Ankle				
Knee				
Nerve: Left Peroneal				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Ankle				
Knee				
Nerve: Right Tibial				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Ankle	5.2	0.5 mV	2.6	22.20
Knee				
Nerve: Left Tibial				
Site	**Latency (ms)**	**Amplitude**	**Area**	**Conduction velocity (m/s)**
Ankle	9.8	0.7 mV	4.1 mVmS	24.50
Knee		150.2 µV	1109.0 µVm	